

What is claimed is:

1. An optical fiber ribbon, comprising at least two optical fiber subunit ribbons encapsulated within a radiation cured encapsulating material, the radiation cured encapsulating material allowing separation of the subunit ribbons by hand tearing of the encapsulating material and adhering to the subunit ribbons upon twisting of the optical fiber ribbon.
2. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a tear resistance of less than about 2.20 pounds force and an adhesion force to an outer surface material of each subunit ribbon of greater than about 0.0044 pounds force.
3. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a percent elongation at break of at least about 5% and a modulus at 25°C of at least about 1000 psi.
4. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a tear resistance of less than about 1.10 pounds force.
5. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a tear resistance of less than about 0.44 pounds force.
6. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a modulus at 25°C of at least about 3000 psi.

7. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a modulus at 25°C in the range of from about 3000 to about 50,000 psi.

8. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a modulus at 25°C in the range of from about 3000 to about 25,000 psi.

9. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a percent elongation at break of at least about 5%.

10. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a percent elongation at break of at least about 10%.

11. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a percent elongation at break of at least about 20%.

12. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has an adhesion force to an outer surface material of each subunit ribbon of greater than about 0.0044 pounds force.

13. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has an adhesion force to an outer surface material of each subunit ribbon of greater than about 0.011 pounds force.

14. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has an adhesion force to an outer surface material of each subunit ribbon of greater than about 0.015 pounds force.

15. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a tear resistance of less than about 1.10 pounds force, a modulus at 25°C of at least about 3000 psi, a percent elongation at break of at least about 10%, and an adhesion force to an outer surface material of each subunit ribbon
5 of greater than about 0.011 pounds force.

16. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material has a tear resistance of less than about 0.44 pounds force, a modulus at 25°C in the range of from about 3000 to about 15,000 psi, a percent elongation at break of at least about 20%, and an adhesion force to an outer surface
5 material of each subunit ribbon of greater than about 0.015 pounds force.

17. An optical fiber ribbon as defined by claim 1, wherein each subunit comprises at least two optical fibers embedded and secured within a matrix material.

18. An optical fiber ribbon as defined by claim 17, wherein each subunit comprises about twelve optical fibers.

19. An optical fiber ribbon as defined by claim 1, comprising two subunit ribbons, wherein each subunit ribbon comprises at least two optical fibers embedded and secured within a matrix material.

20. An optical fiber ribbon as defined by claim 19, wherein each subunit ribbon comprises about twelve optical fibers.

21. An optical fiber ribbon as defined by claim 20, wherein the optical fibers of each subunit ribbon are arranged substantially within a single plane.

22. An optical fiber ribbon as defined by claim 1, wherein the radiation cured encapsulating material is formed by radiation curing a composition comprising from about 30 to about 80 weight percent of a polyether-based urethane acrylate oligomer, from about 1 to about 40 weight percent of monomer having a plurality of acrylate or methacrylate moieties, and an effective amount of a photoinitiator for radiation curing the composition upon exposure to curing radiation.

23. An optical fiber ribbon as defined by claim 22, wherein the radiation cured encapsulating material is formed by radiation curing a composition comprising from about 40 to about 75 weight percent of the polyether-based urethane acrylate oligomer, from about 10 to about 30 weight percent of the monomer having a plurality of acrylate or methacrylate moieties, and from about 0.1 to about 20 weight percent of the photoinitiator.

24. An optical fiber ribbon as defined by claim 22, wherein the radiation cured encapsulating material is formed by radiation curing a composition comprising from about 50 to about 70 weight percent of the polyether-based urethane acrylate oligomer, from about 15 to about 25 weight percent of the monomer having a plurality of acrylate or methacrylate moieties, and from about 1 to about 10 weight percent of the photoinitiator.

25. An optical fiber ribbon as defined by claim 22, wherein the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer.

26. An optical fiber ribbon as defined by claim 22, wherein the monomer having a plurality of acrylate or methacrylate moieties comprises a triacrylate or a trimethacrylate of an isocyanurate.

27. An optical fiber ribbon as defined by claim 22, wherein the composition further comprises a viscosity-reducing component in an amount sufficient to lower the viscosity of the composition.

28. An optical fiber ribbon as defined by claim 22, wherein the composition further comprises a coefficient of friction reducing component in an amount sufficient to lower the coefficient of friction of the radiation cured encapsulating material.

29. A radiation cured material having a tear resistance of less than about 2.20 pounds force and an adhesion force to an underlying surface material of greater than about 0.0044 pounds force.

30. A radiation cured material as defined by claim 29, having a percent elongation at break of at least about 5% and a modulus at 25°C of at least about 1000 psi.

31. A radiation cured material as defined by claim 30, having a tear resistance of less than about 1.10 pounds force, a modulus at 25°C in the range of from about 1000 to about 50,000 psi, a percent elongation at break of at least about 10%, and an adhesion force to an underlying surface material of greater than about 0.011 pounds force.

32. A radiation cured material as defined by claim 30, having a tear resistance of less than about 0.44 pounds force, a modulus at 25°C in the range of from about 3000 to about 25,000 psi, a percent elongation at break of at least about 20%, and an adhesion force to an underlying surface material of greater than about 0.015 pounds force.

33. A radiation cured material as defined by claim 29, formed by radiation curing a composition comprising from about 30 to about 80 weight percent of a polyether-based urethane acrylate oligomer, from about 1 to about 40 weight percent of isocyanurate monomer having a plurality of acrylate or methacrylate groups, and an effective amount of a photoinitiator for radiation curing the composition upon exposure to curing radiation.

34. A radiation cured material as defined by claim 33, wherein the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer.

35. A radiation cured material as defined by claim 33, wherein the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate.

36. A radiation cured material as defined by claim 33, formed by radiation curing a composition comprising from about 40 to about 75 weight percent of the polyether-based urethane acrylate oligomer, from about 10 to about 30 weight percent of the isocyanurate monomer, and from about 0.1 to about 20 weight percent of the photoinitiator.

37. A radiation cured material as defined by claim 33, formed by radiation curing a composition comprising from about 50 to about 70 weight percent of the polyether-based urethane acrylate oligomer, from about 15 to about 25 weight percent of the isocyanurate monomer, and from about 1 to about 10 weight percent of the photoinitiator.

38. A radiation cured material as defined by claim 37, wherein the polyether-based urethane acrylate oligomer comprises a polypropylene glycol-based urethane acrylate oligomer and the isocyanurate monomer comprises a triacrylate of trishydroxyethyl isocyanurate.